Embassy of the United States of America
Dar es Salaam, Tanzania

Subject: Scope of work for house No.404 Toure Road Refurbishment.

B. SCOPE OF WORK

B.1 INTRODUCTION

The US Embassy, Dar es Salaam wishes to solicit your technical proposal and pro forma cost estimate to renovate house # 404 located at Toure Road Dar es Salaam as per instructions given in this SOW. The works shall be done as per scope of work, specifications and general contract conditions. This project requires an experienced class 6 and above registered contractor in civil/building and electrical works to design and execute the job.

This project will involve electrical upgrade at staff quarters and outside main house, new hardwood interior doors installation to replace softwood doors/flash doors currently installed, boundary walls vertical extension/security upgrade as instructed here under, guard booth and staff quarters rehabilitation, pumps area secure /reallocating water storage tanks from current position to the backyard, new security grills for the widows in the first floor, driveway full upgrade, renovation of two bathrooms inside main house, upstairs porch area restoration and demolishing existing wooden pergola, installing new waterproof membrane for the flat roof, remove and install new ceramic tiles to replace all parquet/wooden floor areas and finally thorough interior/exterior painting for the whole house including perimeter walls.

The Contractor shall provide all labor, materials, tools, equipment, supervision and other related items and activities required to complete the project.

NOTE: All materials and items to be installed must be approved by the Contracting Officer Representative (COR)/Facility Manager before use. Any changes/substitutes on material shall be approved by COR/Facility Manger before proceeding. Failure to do so will result into rejection of the work and the contractor will have to redo it at his/her own cost.

The Contractor is responsible for the protection of existing structures and utilities. Workers shall stay within the site area. Any damage caused by the Contractor shall be repaired at the Contractor's expense. Contractors are advised to visit the site and verify the existing site conditions prior to developing their proposal.

Prepared by:

Diana M. Babu
US Embassy
Projects Engineer

B.2 DESCRIPTION OF WORK

The contractor shall be responsible for the following:

B.2.1 Thoroughly interior/exterior painting for the entire house including perimeter walls as well as main entrance/exit gate.

B.2.2 Replacing existing rusted security grills upstairs with new ones.

B.2.3 Perimeter wall vertical extension as per security requirements.

B.2.4 Driveway re-leveling/upgrade and installation of new chain-link fence at the pump area.

B.2.5 Guard booth expansion and staff quarter renovation.

B.2.6 Removing old doors and installing new hardwood interior doors.

B.2.7 Installation of water proof membrane at the existing concrete slab/flat roof in replacement of ceramic tiles currently installed.

B.2.8 Electrical upgrade in areas identified in this SOW

B.2.9 New tiles installation to replace existing parquet/wooden floor and areas with terrazzo floor finish

B.2.10 Securing/enclose pump area and water storage tanks reallocation.

B.2.11 Completely demolition of exiting wooden pergola and restoration of first floor porch/veranda area

B.2.12 Main house bathrooms repair/restoration.

B.2.1 EXTERIOR/INTERIOR PAINTING WORK

N.B Painting involves all block walls (interior/exterior), metal and wood works.

A- Preparation

a) All external surfaces to be painted shall be cleaned with a high-pressure spray wash prior to painting. Any lose or peeling paint shall be scraped and sanded as needed prior to painting.

b) Wash all surfaces to be painted with an anti-fungal wash applied per manufacturer instructions.

c) Any cracks and/or holes in plaster or concrete walls shall be cleaned and filled with appropriate sand - cement mixture prior to painting. Any exposed metal reinforcing bars shall be cleaned with a wire brush and primed with a zinc-based primer. Area repaired shall be spot primed.

d) Any metal work shall be sanded/metal brushed prior to painting. Where there is rust evident or the surface has peeled or blistered, the area shall be cleaned to bare metal and a coat of zinc based primer applied to the area prior to painting.

e) Any woodwork that shows signs of peeling or blistering after the initial power wash will be sanded down to bare wood and spot primed prior to painting.

B- Technical Specification for Painting Work

Paint surfaces as directed by the task order. Match paint to similar adjacent materials or surfaces.

(1) "Paint" includes coating systems materials, primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

(2) Product Data: Contractor shall submit manufacturer's technical information, label analysis, and application instructions for each paint material proposed for use to the COR, prior to starting work. As an attachment, list each material and cross-reference specific coating and finish system and application. Identify each material by the manufacturer's catalog number and general classification.

(3) Single Source Responsibility: Provide primers and undercoat paint produced by the same manufacturer as the finish coats.

(4) Material Quality: Provide the manufacturer's best quality trade sale type paint material. Paint material containers not displaying manufacturer's product identification will not be acceptable. “Galaxy” paints or “Goldstar” are preferred.

(5) Deliver materials to the job site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label with trade name and manufacturer's instructions.

(6) Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 degrees F (7 degrees C). Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

(7) Project Conditions: Do not apply paint when the relative humidity exceeds 85 percent, at temperatures less than 5 degrees F (3 degrees C) above the dew point, or to damp or wet surfaces. Apply paint only in temperatures in accordance with manufacturer's specifications.

(8) Examine substrates and conditions under which painting will be performed for compliance with requirements. Do not begin application until unsatisfactory conditions have been corrected.

(9) Preparation:

- Remove hardware and hardware accessories, plates, light fixtures, and items in place that are not to be painted, or provide protection such as taping prior to surface preparation and painting. (Taping includes windows, door jams, etc.)

- Clean and prepare surfaces to be painted in accordance with manufacturer's instructions before applying paint or surface treatments. Remove oil, dust, dirty, and loose rust, mildew, peeling paint or other contamination to ensure good adhesion. In some cases, Contractor may be required to remove all existing coats of paint and sealers if prior paint application is showing signs of

improper adhesion, i.e. such as peeling, chipping. All surfaces must be clean and dry. Schedule cleaning and painting so dust and other contaminants will not fall on wet, newly painted surfaces.

- Notify the owner in writing of problems anticipated for any minor preparatory work required, such as but not limited to, filling nail holes, cleaning surfaces to be painted, and priming any requisite areas. Plan preparatory work as some areas will have nail holes or areas that will need to be primed or sealed. Replace all covers and equipment after painting.

(10) Materials Preparation: Mix and prepare paint in accordance with manufacturer's directions. Do not water down or thin paint.

(11) Application: Apply minimum of three coats of paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.

(a) Contractor shall paint color samples of the color to be used on a section of the intended area to be painted before the actual paint date is scheduled to ensure that the color selected is the most appropriate color available.

(b) On exterior masonry surfaces and soffits, apply a high quality exterior grade latex base paint that matches as closely as possible the existing color on the exterior of the property, or a color as otherwise specified by the owner. Prior to painting, the surface is to be scraped, sanded, filled, and primed with a latex base primer. The contractor should plan on extensive preparatory work prior to painting. Do not apply exterior paint in rain, fog or mist; or when the relatively humidity exceeds 85

percent; or to damp or wet surfaces. **Apply a 30-inch high from ground level a black oil based paint "skirting" around the perimeter of all building and/or wall surfaces which are to be painted.** In exterior staircases the skirting shall be reduced to a height of 6 inches from the top edge of each step**. Paint all fascia board with oil based paint.**

(c) Provide finish coats that are compatible with primers used.

(d) The number of coats and film thickness required is the same regardless of application method. Do not apply succeeding coats until previous coat has cured. Sand between applications where required to produce a smooth, even surface.

(e) Apply additional coats when undercoats or other conditions show through final coat, until paint film is of uniform finish, color, and appearance.

(12) Scheduling Painting: Apply first-coat to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable, and before subsequent surface deterioration. Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried.

(13) Minimum Coating Thickness: Apply materials at the manufacturer's recommended spreading rate. Provide total dry film thickness of the system as recommended by the manufacturer.

(14) Prime Coats: Before application of finish coats, apply a prime coat as recommended by the manufacturer to material required to be painted or finished, and has not been prime coated.

(15) Brush Application: Brush-out and work brush coats into surfaces in an even film. Eliminate cloudiness, spotting, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Draw neat glass lines and color breaks.

Apply primers and first coats by brush unless manufacturer's instructions permit use of mechanical applicators.

(16) Mechanical Applications: Use mechanical methods for paint application when permitted by manufacturer's recommendations, governing ordinances, and trade union regulations.

Wherever spray application is used, apply each coat to provide the equivalent hiding of brush-applied coats. Do not double-back with spray equipment building-up film thickness of two coats in one pass, unless recommended by the manufacturer.

(17) Upon completion of painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing, scraping or other proper methods, and using care not to scratch or damage adjacent finished surfaces.

(18) Remove temporary protective wrappings after completion of painting operations.

B.2.2 SECURITY WINDOW GRILLES REPLACEMENT

Without causing damage to existing aluminum window frame and window glass, Contractor shall:

B.2.2.1. Remove and discard all existing grilles to prepare the site for the new installations. The contractor will be responsible for repairing and reinstalling any electrical, mechanical and structural damages caused by the work activities.

B.2.2.2. Supply and install steel window grilles over all existing first floor widows in the

specified building as indicated in drawings provided.

B.2.2.3. Grilles and interior partitions shall be made of heavy duty dip galvanized mild steel frame; use vertical and horizontal steel bars with square cross section dimensions of 2cm X 2cm, spacing between vertical and horizontal bars shall be 10 cm c/c.

B.2.2.4. Contractor shall fabricate steel frame using steel angles size 6cm X 6cm X 4mm thickness of same design as ground floor window grilles. Provide egress opening with door per each bedroom (one window); the egress opening net dimension must comply with SHEM requirements (same dimension as one taken off).

B.2.2.5. The grilles shall be attached to exterior walls with steel angle ties and plates, painting with one coat of primer undercoat and at least two coats of acrylic marine paint same color as existing. Window grilles and egress dimensions must be:

- Operable from the inside only.
- Minimum opening: 5.7 ft.2 (0.529 m2).
- Minimum dimension: 24 inches (61 cm) x 20 inches (51 cm) and not be more than
- 44 inches (112 cm) above interior finished floor.
- Bars or grilles must have inside release mechanism.

B.2.3 BOUNDARY WALLS SECURITY UPGRADE

Contractor shall;

2.3.1 Temporary and carefully remove the existing metal spikes on top of the walls.

2.3.2 Demolish/hack the upper part of the existing walls ready to receive additional bricks courses on top, hacking will facilitate strong bond between the existing blocks and the new one.

2.3.3 Construct 150mm thick block and 600mm high including plastering.

2.3.4 Treat/Fill all the openings and crakes current present at the walls with good ratio cement mortar mix before painting.

2.3.5 Prepare well the surface to receive two undercoats and one finishing coat of weather guard paint.

2.3.6 Install back the metal spikes which are in good shape replace any broken or bent spike with new one. The distance between spikes and the protruding length of the spike should be same as existing one.

2.3.7 Install new Concertina wires (stainless steel covered in plastic green cover) on top of the walls along with metal spikes for the entire perimeter walls.

2.3.8 Clean and clear the site at the end of each working day and general cleaning of the site at project completion.

B.2.4 DRIVEWAY UPGRADE/RE-LEVELING

Contractor shall;

2.4.1 **Leveling/ Laying of Sub-base Materials**

2.4.1.1 Carefully, remove existing concrete surface and dispose the debris properly.

2.4.1.2 Contractor Shall also demolish bar area at the backyard of the house with its shedding structure and parapet walls surrounding it and leave the area open ready for installation of new paving blocks

2.4.1.3 By means of Dumpy level, perform leveling of the entire driving area and regrade the area with proper slope that direct water flow to the garden/grass areas.

2.4.1.4 Contractor shall raise the ground level of bar area at the backyard to same level as the rest of the driveway.

2.4.1.5 After leveling is done, the area is to be watered and compacted in layers by means of plate compactor. The leveled formation is to be inspected and approved by COR before installation of interlocking pavers.

2.4.2 **Laying Interlocking Paving Stones**

2.4.2.1 Sand material bedding of approved quality shall be placed in 50mm layer, leveled and watered.

2.4.2.2 Interlock paviors (100 x 200 x 80mm) shall be collected from approved source and laid in approved pattern as per approved for construction drawings.

2.4.2.3 Interlock paviors shall be neatly trimmed/cut to fit perfectly into curb stones edges as applicable.

2.4.2.4 Fine/dune sand material shall be placed on top of laid Interlock paviors to fill in the joints.

2.4.2.5 The laid Interlock paviors is then compacted by means of Plate compactor.

2.4.2.6 The dune sand shall be hand brushed and removed after the compaction works is completed to the satisfaction of the Site engineer.

2.4.2.7 Contractor shall ensure proper drainage of storm water outside the compound, the slope of finished surface shall be directed outside main entrance gate.

2.4.3 **Laying of Curbs Stones**

2.4.3.1 Upon reaching the Sited Sub-grade formation level, the Contractor shall set out proposed curb Line.

2.4.3.2 Wood/metal forms for the Curbs concrete base construction shall be placed and securely braced to limit any deflection during the concrete placement.

2.4.3.3 Concrete of grade 15 (M15) shall be placed in erected formwork after wetting to aid bonding.

2.4.3.4 Steel Dowel bars shall be placed in the concrete base slab if required.

2.4.3.5 Curbs shall be laid on cement mortar (1:4) bedding not more than 25mm thickness on concrete base as to adjust the levels of the Curbs with a maximum tolerance of 3mm

2.4.3.6 In curvature locations and corners, Curbs shall be tailor cut according to the shape and dimensions.

2.4.3.7 As soon as Curbs have been laid, contiguous Concrete backing of specified grade shall be poured behind laid Curbs for rigidity.

2.4.3.8 Joints between the Curbs (Not more than 4mm) shall be filled with fluid cement mortar (1:4).

2.4.3.9 At every 10 to 20m intervals, moment joint of 20 mm thick shall be formed through the concrete bed and backing as well as the Curbs. Impregnated fiber board shall be used to fill the movement joints.

2.4.3.10 Proper curing shall be done for the Curbstones, base and backing for seven days.

B.2.5 GUARDBOOTH AND STAFF QUARTER RENOVATION

B.2.5.1 Guard booth Enlargement

2.5.1.1 Completely demolish the existing Guard booth.

2.5.1.2 Construct new (2 x 2) m guard booth (bigger than existing) using 150mm thick blocks.

2.5.1.3 The new booth shall have two new aluminum windows of reasonable size min of (800 x 800) mm.

2.5.1.4 Install new hardwood (Mkongo/Mninga) door for the booth same size as existing.

2.5.1.5 Install new Decra roof tiles and gypsum ceiling the color of the roof tiles should match with main house roof cover.

2.5.1.6 Contractor shall do electrical wiring for the new booth and install new electrical outlet (double socket) as well as lightings.

2.5.1.7 Contractor shall paint the new Guard booth with similar color following painting procedure above.

B.2.5.2 Staff Quarter Renovation

2.5.2.1 Carefully remove existing rotten windows and doors at staff house without disturbing any other structure and replace it with new ones.

2.5.2.2 Replace the wooden windows with Aluminum windows and use hardwood Mninga/Mkongo, for the door frame and the door itself.

2.5.2.3 Replace window grilles and weld it properly makes sure is in position.

2.5.2.4 Contractor shall install new door grilles as per security specification in appendix 1 attached below.

2.5.2.5 Install new floor tiles as described in section **B.2.9** of this SOW.

2.5.2.6 Contractor shall as well supply and install Modified bitumen roof membrane to replace existing one on the flat roof so to resolve leaking situation. (see section B.2.7 for installation procedures)

2.5.2.7 Contractor shall install all new bathrooms fixtures and accessories (toilet, wash basin, toilet paper holder and mixers)after new plumbing pipes system are installed

2.5.2.8 Contractor shall thoroughly paint the staff quarters after all other renovation works are completed following painting procedures described in section B.2.1 above.

2.5.2.9 New metal roof for the generator room shall as well be provided and installed by the contractor along with staff quarter's renovation works. Roofing materials shall be approved by COR before roofing.

B.2.6 NEW HARDWOOD INTERIOR DOOR INSTALLATION

Contactor shall:

2.6.1 Carefully, remove the existing interior softwood/Flash doors.

2.6.2 Prepare the surface ready to receive new door frames well straighten so as to avoid noticeable gaps between the wall and door frame

2.6.3 Completely, remove and discard existing louvered glass window at first floor bedroom room 1 and the opening shall be blocked with cement bricks to solid wall with similar surface finish as all other interior walls.

2.6.4 Install new hardwood (Mninga/Mkongo) interior doors and door frames with same dimensions as existing one.

2.6.5 The contractor shall supply and fix all necessary door fixtures such as hinges and door locks after approval form the COR. The recommended locks to be used are ORLANDO single cylinder door locks for all the doors.

2.6.6 All doors and door frames shall be vanished with approved vanish/polish product preferable Ronseal sealant to natural wood finish.

2.6.7 The Contractor shall provide design and door schedules for the doors to be replaced. Doors shall be properly labeled and meet required codes and specifications.

B.2.7 INSTALLATION OF THE WATERPROOF MEMBRANE

2.7.1 Surface Preparation

In general, waterproofing membrane should mechanically be fixed in accordance with the membrane manufacture instruction. MODIFIED BITUMEN 2PLT torch on waterproofing membrane roofing product from Nabaki Africa is highly recommended, contractor may use

similar or higher quality product may after being approved by COR. General surface preparation work shall be done as described below:

2.7.1.1 Preparation and cleaning shall be made on the area by removing loose material and using soft broom stick or the like.

2.7.1.2 Oil, grease and paints shall be removed by using rug cloth and paint scraper respectively. Cracks shall be repaired with approved repairing material.

2.7.1.3 In the case of the joints between water proofing membrane cover and wall, the gap between should well sealed with water proofing product(Silicon or Flexikote) from Nabaki Africa before applying waterproofing material membrane cover.

2.7.2 Execution

2.7.2.1 Carefully remove the existing ceramic floor tiles installed on the roof area.

2.7.2.2 Contractor shall as well remove completely and dispose existing shade net installed at the rooftop and seal the area nicely with approved concrete sealant ready to receive new membrane.

2.7.2.3 For horizontal waterproofing membrane application. Two layer of 4mm thick modified bituminous membrane shall be laid fully torched on blinding concrete with minimum of 100mm end laps and 150mm side laps.

2.7.2.4 The blinding surface shall be primed with the primer recommended by the manufacturer of the membrane prior to placing the membrane. Prior to succeeding works the applied primer shall be inspected by the Engineer 24 hours after the placement.

2.7.2.5 Waterproofing membrane installation shall be performed using cylinder fed propane gas torch, trowel to seal the seams of the membrane and knife for cutting.

2.7.2.6 The membrane should then be placed in the correct torching on position then re-rolled for about half of its length without changing its orientation.

2.7.2.7 The membrane should then be un-rolled again and torched on pressing the melted area against the substrate.

2.7.2.8 Repeat till the entire length of the membrane is bonded firmly onto the surface then the second membrane is laid in the same way with an overlap of 150mm at the end and 100mm at the side.

2.7.2.9 For vertical application, two layer of 4mm thick modified bituminous waterproofing membrane shall be applied to all vertical surfaces of gunited shoring or blockworks wall.

B.2.8 ELECTRICAL UPGRADE WORKS

The work will consists with mainly complete rough-in and finish work for the electrical reinstallation works for the staff quarter building internally and externally. The contractor shall furnish and install all the wiring, conduits, etc… in order to the existing electrical layout of the building.

Contractor shall carefully remove all old wires (surface wiring and concealed wires) and do rewiring of the staff/maids quarter as per NEC/IEC and as instructed below. Inside main house, contractor shall replace all single electrical outlets with double outlets and supply and install 2 DB 16-ways for ground and first floor power distribution and 1DB 8-ways for all exterior power distribution to provide power separation between ground floor, first floor and outside main house power distribution.

B.2.8.1 Measurement

Measurements may be performed by on-site surveying or through the use of record drawings. The contractor is responsible to ensure that the measurements used are accurate.

B.2.8.2 Codes, Standards and Specifications

The standards and codes of practice listed here shall be considered as a guideline only and shall not relieve the Contractor from his contractual obligations to provide all equipment, components, Works and services in accordance with the laws, by laws and rules:

- 16th edition of I. E. E wiring Regulations in Building – BS7671:1992;
- IEC Standards;
- British Standards and Code of Practice;
- Tanzania Standards as published by the Tanzania Bureau of Standard;
- Any other Code and Standard and Approved by the Consulting Engineer.

Where the equipment or part of it complies with other internationally recognized standards, which are less stringent than the above-mentioned standards, the differences are to be stated in writing and must accompany the tender submission.

NB;

- Voltage between NEUTRAL and EARTH should not exceed 3ACV I.E.C standard

- Earth grounding and bonding is required to be less than 25Ω US NEC and IEC

B.2.8.3 Specification of the Equipment and Workmanship

B. 2.8.3.1 Switches and Fuse Switches

These shall be in strict accordance with BS 5419. All fuse switches shall comply with BS 5419 and shall have a fault rating at least equal to the fault rating of the switchboard in which they are installed. Cartridge fuse links to BS 88, category AC 46, Class Q1 and fusing factor not exceeding 1.5 shall be supplied with each fused switch.

Mounting arrangements shall be such that individual complete fuse switches may be disconnected and withdrawn when necessary without extensive dismantling work. When switches are arranged in formation all necessary horizontal and vertical barriers shall be provided to ensure segregation from adjacent units. Means of locking the switches in the 'OFF" and "ON" positions shall be provided together with suitable brass padlocks.

B.2.8.3.2 Distribution Boards

The Distribution Boards shall be fitted with high quality fuse carriers and bases, removable insulated shields to provide adequate protection against accidental contact with live metal, and circuit indicating labels fixed inside the cover.

The Distribution Boards shall be complete with HRC fuses to BS 88:1982, Category 440 Volts. Where the requirement for miniature circuit breakers the Distribution Boards shall be fitted with molded thermoplastic units of the combined thermal overload and magnetic short circuit tripping type to BS 3871: Part 1 1984 having clearly marked "ON" and "OFF" positions. MCB's of all ratings shall have a minimum short circuit current breaking capacity of 3000A for single breakers and 4000A for triple pole breakers.

Insulation resistance for the entire house from the main distribution board to entire distribution is to be 0.5mΩ at the voltage of 500VDC IEC.

B.2.8.3.3 Conduit and Associated Fittings

Conceal all surface wiring in conduit run in chases in walls. All conduits shall be fixed by means of mild steel pipe hooks or non-metallic saddles spaced not more than 1000mm. Where conduit is concealed behind plaster it shall be chased to a depth of either 15mm below finished plaster level or installed flush with the structural wall level before application of plaster, whichever is the lesser depth.

B.2.8.3.4 PVC Conduit

The conduit shall be bent and formed strictly in accordance with the Manufacturer's instructions. Small sized conduit ranging from 16 to 25mm diameters shall be bent cold by inserting the correct size bending spring. It is essential for right angle bends that the conduit is bent past 90° to allow for 'spring back'.

Large sized conduit shall be pre-heated before inserting rubber cord to prevent kinking. Conduit badly formed or bent, or damage in any way, shall not be used.

B.2.8.4 Installation

B.2.8.4.1 Examination and Preparation

The Contractor shall inspect all existing conditions, which may impact successful completion of the project. Successful completion of the project is defined as the project being successfully completed on time and within budget while not adversely affecting the occupants of the residence. The Contractor shall report to the COR and Post's General Services Officer any defective existing conditions found which would impair successful completion of the project and include recommended procedure for overcoming the defects. Await response from COR before proceeding with aspects of the renovation project that are in question.

The Contractor shall ensure that cables in any conduit/trunking are in compliance with the space capacity ratio. The Contractor shall plan the conduit/trunking runs to confirm to the building structure and collaborate with the Main Contractor ensuring that all works required are done at a proper time and in proper place. Any mistake or omission shall be rectified at the expense of the Contractor.

Generally all the installations shall either be flush or concealed above ceilings or in purpose made boxing unless stated otherwise. Cables for power for general use, air conditioning units, lighting, cookers, and any other equipment shall be installed in concealed heavy-duty PVC conduits.

B.2.8.4.2 Products

All materials will be supplied and installed by the contractor. The contractor shall be responsible for furnishing any other materials to finish the required work stated herein.

1. Receptacles and switches.
2. Wires and cables.
3. Conduits and boxes.
4. Distribution Board (Insulation resistance for the entire house from the main distribution board to entire distribution is to be 0.5mΩ at the voltage of 500VDC IEC.)

B.2.8.4.3 Execution

All the conduits shall be embedded in the walls. Minimum damage shall be allowed to the walls' plaster and paint. For all new wiring, the wiring and conduits shall be connected from the electrical panel from the utility room through the gypsum ceiling. The contractor shall repair the gypsum ceilings prior delivering the project.

The work will be performed according to approved shop drawings. Any changes due to field condition are to be discussed with the COR.

i. Conduit joints shall be made by brushing plastic solvent cement on insides of plastic coupling fittings and on outsides of duct ends. Each duct and fitting shall be slipped together with a quick 1/4˝ turn twist to set the joint tightly.
ii. A 1/4 nylon or polypropylene pulling rope shall be pulled in each unused or spare conduit.
iii. All embedded conduits shall be rigid PVC conduit.
iv. Field-made bends and offsets shall be made with an approved conduit air heaters or a special fittings can be used. Crushed or deformed raceways shall not be installed.
v. Conduits shall be securely and rigidly fastened in place at intervals of not more than 2 meters and within 300 mm of boxes, cabinets, and fittings with approved wall brackets, conduit clamps, conduit hangers or ceiling trapeze.
vi. Conduits shall be fastened to boxes and cabinets with connectors, locknuts and bushings.
vii. Exposed raceways shall be installed parallel or perpendicular to walls or structural members.
viii. Power raceways shall not contain more than four 90-degree bends or the equivalent in any one run. Communication raceways shall not contain more than two 90-degree bends or the equivalent in any one run.
ix. A conduit-coupling fitting, threaded on the inside, shall be installed flush with the finish floor.
x. The bottom of boxes installed in ceramic tiles for concealed wiring shall be mounted flush with the tiles and at edges of the tiles to minimize cutting of tiles.

xi. Color-coding shall be provided for service, feeder, branch and ground conductors. Color shall be green for grounding conductors and white for neutrals. Grounding conductor shall be bare copper, except where installed in conduit with associated phase conductors. Insulated conductors shall be of the same material as phase conductors and green color coded.

xii. When the installation is complete, the conduits shall be sealed with approved sealing compound.

xiii. Conductor phase and voltage identification shall be made by color-coded insulation. Conductors with black insulation may be furnished and identified by the use of half-lapped bands of colored electrical tape wrapped around the insulation for all entire length inside power panels and boxes. Phase identification shall be maintained continuously for the length of a circuit, including junctions.

xiv. The color coding for 3-phase low voltage system shall be as follows: Red (A), Yellow (B), and Blue(C).

xv. The feeders shall be tagged to indicate the electrical characteristics (voltage, HZ, cable size, circuit number and panel designation).

xvi. Control circuit conductors shall be identified by color-coded insulation (black color-coded) and marked by numbers.

xvii. Wiring shall be carried out in an approved type of PVC insulated copper cables.

xviii. The color of the sheaths shall comply with the color code requirements of the 16th Edition of the IEE Wiring Regulation – 514-06-01 applicable to the entire lengths of the cables.

xix. All wires and C.B.'s (circuit breaker) inside power panels shall be marked by numbers.

xx. All wires inside light fixtures, receptacles, disconnect switches and boxes shall be marked with circuit numbers and panel configuration.

xxi. All power panels shall be provided with circuit directory card to indicate clearly circuit no., CB size, wire size and load.

xxii. All power panels, disconnect switches... etc, shall be tagged with labels.

B.2.8.4.4 Test

5.4.1 Megger test for cables and wires.

5.4.2 Performance test for light fixtures, receptacles…etc

B.2.9 TILLING WORK

All parquet/wooden and terrazzo floor finishing shall be remove thereafter new approved ceramic floor tiles shall be installed by the contractor to replace wooden floor as explained below:

2.9.1 Lay tiles from the centerline of each space outward to obtain border tile of equal width and larger dimension.

2.9.2 Lay tiles in grid pattern. Align joints if adjoining tiles on floor and walls are the same size. Joints shall be uniform in width.

2.9.3 Set tile firmly on the mortar bed. Strings or pegs may be used to space tiles that have no spacers. Bring all surfaces to a true plane at the proper position or elevation. Thoroughly beat-in all tiles while the mortar bed is still plastic.

2.9.4 Make adjustment of tile before initial set of the mortar takes place.

2.9.5 Terminate work neatly at obstructions, edges, and corners without disturbing the pattern or joint alignment.

2.9.6 Grouting: before grouting, wet the joints between tiles if tiles have become dry, force a maximum amount of grout into the joints, and fill all gaps and skips. The finished grout shall be uniform in color, smooth, and without voids, pinholes or low spots.

2.9.7 Cleaning: Upon completion of installation, clean all tile surfaces so they are free of foreign matter and leave finished installation clean and free of cracked, chipped, broken, non-bonded, or otherwise defective tile work.

B.2.10 ENCLOSING WATER PUMP AREA

By means of PVC coated chain link fence, Contractor shall properly enclose/secure pump area as explained here under:

B.2.10.1 The fence shall be 1.5m high PVC coated with metal access door.

B.2.10.2 The fence shall be well stretched by pulling on the come-a-long ratchet bar. Do not over-stretch the wire. The desired tightness is when you can put your fingers through the mesh and just barely squeeze the diamonds together.

B.2.10.3 It shall be green in color PVC coated with coated with not more than (50x50) mm diamonds opening size and of 2.5mm thick.

B.2.10.4 The contractor shall install new metal door/gate (1.5 x 0.9)m with all necessary fittings i.e. door locks etc

B.2.10.5 Construct two (2x2) m reinforced concrete slabs close to generator building to reallocate the water storage tanks currently placed in front of staff quarter to this new position where the two slabs are built.

B.2.11 UPSTAIRS PORCH/VERANDA RESTORATION

B.2.11.1. Contractor shall carefully demolish for disposal wooden pergola installed in front of the porch at first floor level.

B.2.11.2. Contractors shall thereafter fill all the gaps left behind after removal of the pergola and do all necessary finishing works to the front part of the wall including but not limited to plastering and painting work with approved exterior paint color above.

B.2.11.3. For porch area at first floor level, contractors shall carefully remove all aluminum window frames together all windows and dispose.

B.2.11.4. Contractor shall prepare the remaining block wall surface ready to receive new hard wood frame for screening the area.

B.2.11.5. Prepare hardwood frame to install new mosquito net and monkey wire to screen the porch.

B.2.11.6. Supply and install new mosquito screen and monkey to screen the porch area keep it away from bugs and mosquitos.

B.2.11.7. Contractor shall drill two holes to drain water away from the porch on the wall side and properly seal the holes with water proof sealant material to avoid water penetrating inside the concrete.

B.2.11.8. Contractor shall thereafter remove old paint to bare wall level, treat all molds and repainting the area using painting procedures described in section B.2.1 above.

B.2.12 MAIN HOUSE BATHROOM UPGRADE

B.2.12.1 Carefully, remove for disposal all old bathroom fixtures in the two bathrooms.

B.2.12.1 Remove floor and wall tiles in all 2 bathrooms leave the walls and floor open for leakage inspection and repair.

B.2.12.2 Contractors shall inspect and replace all leaking pipes after remove of all fixtures, all other pipes supplying water inside the two bathrooms upstairs shall as well be replaced with new ones from entrance point to the main house to end point. IPS/PVC pipes shall be used when replacement is done.

B.2.12.3 Supply and install approved sanitary wares, new tab with mixer, toilets and washing basin with storage vanity. The design of new wash basin with vanity (storage area) shall be submitted and approved by COR prior installation.

B.2.12.4 Contractor shall then supply and install new ceramic/non skids floor and walls tile in all three bathrooms of the same size as existing following tiles installation procedures as identified in section B.2.9 of this SOW document.

B.2.12.5 Supply and install new framed mirrors along with wash basins in all the 2 bathrooms. (Mirror sample must be brought to COR/FM for approval before placing).

B.3.0 SUBMITTALS (EVALUATION CRITERIA)

The Contractor shall submit the following as part of their bid:

3.1 Technical proposal with clearly stated work method statement.

3.2 A tentative schedule for the project which shall not exceed the government estimate of 50 working days.

3.3 Company organization Chart portfolio, including previous similar works, references, and CVs of key Personnel for this project.

3.4 Project Supervisor/Manager holding a degree in a civil engineering and at least three years' experience in construction projects managements works.

B.4 CONDITIONS OF CONTRACT

B.4.1 General

This is a firm fixed price turnkey project and amount quoted shall include all work described in the scope of work and the general condition of contract. The lump sum price quoted shall be fixed and nothing extra will be entertained on any account.

The Contractor shall restore all surfaces disturbed by the work to match with existing surfaces. Any deviation from the original contract/scope of work shall be reported to the Contracting Officer Representative (COR) before work begins, and approved by the Contracting Officer (CO). No additional work or changes will be carried out without a contract modification and prior approval.

B.4.2 Responsibilities of the Contractor

- The Contractor shall be responsible for procuring, supplying, transporting, and providing all labor, materials, tools and equipment etc., required for completion of the work in all aspects and as per the scope of work.

- All expenses towards mobilization at site and demobilization including bringing in equipment, workforce and materials, dismantling the equipment, clearing the site etc. shall be deemed to be included in the rates quoted by the Contractor against various items of schedule of rates and no separate payment of such expenses shall be considered or granted.

- The Contractor shall employ and provide one full time civil engineer to supervise the project. The assigned engineer should have proven prior experience of carrying out such type of work.

- The Contractor shall not proceed with the next scheduled activity until the previous activity has been checked and approved by the COR. The Contractor shall note all inspection dates in the schedule chart.

- The Contractor shall keep the site clean and accessible to Embassy employee at all times.

- All required permits to execute the project shall be the sole responsibility of the Contractor.

B.4.3 Specifications

Work under this contract shall be carried out strictly in accordance with the specifications attached and will meet U.S. and Local codes.

B.4.4 Execution of Work

The Contractor is advised to review the material specifications and the scope of work. The Contractor should visit and walk through the site to familiarize themselves with the site conditions and to understand the exact quantity and quality of work

Within 3 working days of Contract Award, the Contractor shall submit the following items via email:

a. Bar chart for review and approval by the COR. All dates and time schedules agreed upon shall be strictly adhered to. The Contractor shall notify the COR in advance regarding anticipated problems or delays throughout the project, or any deviation of the schedule.

b. Weekly schedule/activity plan for the coming week for the duration of the project *prior to the start date*.

3. For dismantling/blocking or making connection to any existing services or any shut-down, Contractor shall inform the COR at least 3 (three) working days in advance and proceed with the work only after approval from the COR.

B.4.5 Project Duration:

The duration of the project shall not exceed 50 working days.

B.4.6 Materials

i. All materials used on this work shall be new and conforming to the contract specifications as per US and local codes.

ii. Materials shall conform to the latest US Standards specifications as amended to date and carry certification mark. Contractor shall submit material samples and catalogues for pre-approval.

iii. All materials used on the project shall be approved by the Contracting Officer Representative (COR) before use. Any changes/substitutes on material shall be approved by COR before proceeding.

iv. All materials shall be stored in a proper manner and protected from natural elements so as to avoid contamination, damage, or deterioration.

B.4.7 Site Clearance and Cleanup

i. The Contractor shall clear away all debris and excess materials accumulated at the site and dispose of it away from the premises daily, maintaining a neat site condition.

ii. Upon project completion, the Contractor shall remove all surplus materials and leave the site in a broom clean condition.

B.4.8 Workmanship

Workers working on the site shall be skilled in their job and have relevant job experience.

B.4.9 Working Hours

1. Working hours shall be from 08:00 A.M. to 18:00 P.M. from Monday to Sunday.

B.4.10 Safety procedures

I. Scope and Application

Contractor must meet with POSHO or representative before each phase of work begins to discuss safety concerns and agree upon appropriate PPE, methodology, and risk mitigation plans.

Contractor shall acknowledge POSHO authority to specify methods and safety equipment, and monitor the work until complete, approved, and shut down.

This document applies to all Contractors and sub-Contractors working at or on American Embassy property owned or leased as specified in the scope of work. While working on U.S. Government projects the Contractor or sub-Contractor are responsible for maintaining an agreed upon and approved level of safety for the workers and the public.

II. This basic requirement is as follows:

1. Proper Protective Equipment will be worn by workers while in any work area or while performing tasks that create hazards for workers. The requirements listed below are minimum requirements, and may be supplemented or added to by the POSHO.

a. Safety glasses will be worn while performing the following

i. Drilling

ii. Chiseling, chipping

iii. Wood working, metal working

b. Hearing protection will be provided for all those who operate loud power tools and equipment.

i. Hard hats will be worn in areas where falling objects are a hazard.

c. Gloves will be worn for cleanup and removal of work area waste and materials. i. Proper footwear will be worn by all workers, including safety shoes.

d. Electrical issues i. All power cords and power taps will be wired appropriately, leaving no exposed wires that are live or could come in contact with staff or other personnel.
ii. While working on electrical systems proper lockout/tag-out procedures will be followed, and the circuit being worked on will be de-energized (turned off at the main breaker).
iii. Power cords and temporary power will be GFCI protected and shall not be placed in areas that are prone to flooding or are wet, (i.e. running through puddles on the floor).
iv. Equipment will be plugged into a standard GFCI-protected receptacle and not wired directly into power taps.

e. Waste cleanup and removal i. All excess or waste materials will be removed from the site at the close of each work day. Debris will be removed to include food bags and containers. Staging of materials shall be in an agreed upon location.

f. Safety meetings shall occur at least once a week with at least one Embassy staff member present, unless otherwise approved.

B.6 NOTICE OF DELAY

In the event the Contractor receives a notice of any change in the work, or if any other conditions arise which are likely to cause or are actually causing delays which the Contractor believes may result in completion of the project after the completion date, the Contractor shall notify the Contracting Officer of the effect, if any, of such change or other conditions upon the approved schedule, and shall state in what respects, if any, the relevant schedule or the completion date should be revised. Such notice shall be given promptly and not more than two (2) days following the first occurrence of event giving rise to the delay or prospective delay. Revisions to the approved time schedule shall only be made with the approval of the Contracting Officer.

B.7 LIQUIDATED DAMAGES - CONSTRUCTION (APR 1984)

If the Contractor fails to complete the work within the time specified in the contract, or any extension, the Contractor shall pay to the Government as liquidated damages, the sum of one percent (1%) for each calendar day of delay.

B.8 EXECUSABLE DELAY

The Contractor will be allowed time, not money, for excusable delays as defined in FAR 52.249-10, Default. Examples of such cases include (l) acts of God or of the public enemy, (2) acts of the United States Government in either its sovereign or contractual capacity, (3) acts of the government of the host country in its sovereign capacity, (4) acts of another contractor in the performance of a contract with the Government, (5)fires, (6) floods, (7) epidemics, (8) quarantine restrictions, (9) strikes, (l0) freight embargoes, (11) delays in delivery of Government furnished equipment and (12) unusually severe weather. In each instance, the failure to perform must be beyond the control and without the fault or negligence of the Contractor, and the failure to perform furthermore (1) must be one that the Contractor could not have reasonably anticipated and taken adequate measures to protect against, (2) cannot be overcome by reasonable efforts to reschedule the work, and (3) directly and materially affects the date of final completion of the project.

B.9 WARRANTY

The contractor shall guarantee that all work performed will be free from all defects in workmanship and materials and that all installation will provide the capacities and characteristics specified. The contract further guarantees that if, during a period of one year from the date of the certificate of completion and acceptance of the work, any such defects will be repaired by the Contractor at his expenses.

B.10 BILLS OF QUANTITIES (BOQ)

CLIN	ITEM DESCRIPTION	UNIT	QTY	MATERIAL UNIT COST	LABOUR UNIT COST	VAT	TOTAL COST
B.2.1	Thoroughly interior/exterior painting for the entire house including perimeter walls as well as main entrance/exit gate.	m²					
B.2.2	Replacing existing rusted security grills at upper floor with new ones.	Item					
B.2.3	Perimeter wall vertical extension as per security requirements specified in the SOW	m²					
B.2.4	Driveway re leveling/upgrade as well as installation of new paving blocks.	m²					
B.2.5	Guard booth expansion and staff quarter renovation.	Lots					
B.2.6	Removing old doors and installing new hardwood interior doors.	Item					
B.2.7	Installation of water proof membrane at the existing concrete slab/flat roof to replace existing worn out membrane	m²					
B.2.8	Electrical upgrade in the areas identified in this SOW	m²					
B.2.9	New tiles installation to replace existing parquet/wooden floor and areas with terrazzo floor finish	m²					
B.2.10	Securing/enclose pump area and reallocation water storage tanks						
B.2.11	Completely demolition of						

Prepared by:

Diana M. Babu
US Embassy
Projects Engineer

	exiting wooden pergola and restoration of first floor porch/veranda area	Lots					
B.2.12	Main house bathrooms repair/restoration.	Lots					

NB EXACTLY QUANTIES WILL BE DETERMINED AND AGREED DURING SITE VISITING.

Prepared by:

Diana M. Babu
US Embassy
Projects Engineer

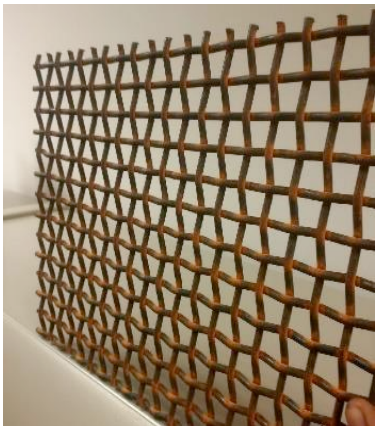
APPENDIX 1

Regional Security Office
Dar es Salaam
Specifications for the Construction of Fire Safety Door Grill

Overview:
A fire safety egress is a door grill that provides unobstructed travel to the outside of the dwelling unit. It shall be a door operable from the inside without the use of tools, keys, or special knowledge or effort and shall provide a clear opening of width not less than 711mm (28 inches)
Specifications:

1. Opening – The door grill may be half opening or whole opening of sufficient width of not less than 711mm (28 inches) to allow an adult to go out in case of emergency. If the door grill is half opening and of width below 711mm it has to be modified to be a whole opening door.

2. Woven wire mesh – The Mild Steel wire mesh of diameter 3mm with a gap of 8mm, or 4mm diameter with a gap of either 10 or 12mm will be supplied by the Regional Security Office. The mesh has to be welded intermittently to the door edges as well as several central places.



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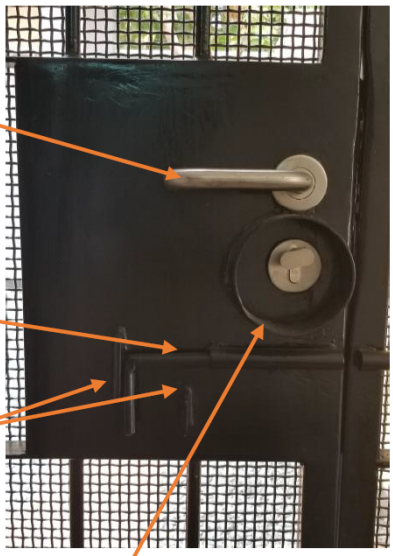
Diana M. Babu
US Embassy
Projects Engineer

3. Locks –



a. A UNION LHT-RR-005-SSS tabular rose lever with a UNION CL-JL2B21-SSS EP 72-60 sash lock and a UNION CY-SP-EP-TK32SNP EP STD key & turn 64mm single cylinder lock (or approved equivalent) must be installed.

b. A sliding bolt of diameter 16mm without padlock locking facility has to be installed at the middle of the first operable door.

The lock has to have both open and close stopper.

c. Round black metal pipe 100mm diameter has to be installed to protect the mortise single cylinder on the inside.

d. Two (2) sliding bolts of diameter 16mm without padlock locking facility have to be installed at the top and bottom of the second opening door. The locks have to have both open and close stoppers. A Mild Steel plate 1.5mm thick (gauge 16) has to be installed to make the lock non operable from the attack side.

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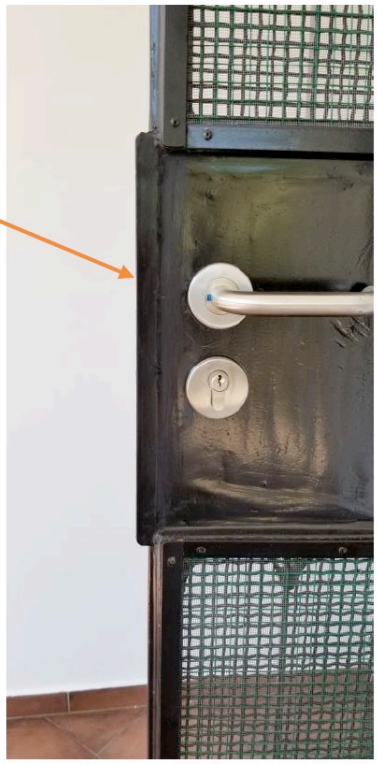
Diana M. Babu
US Embassy
Projects Engineer

4. Binder - Mild Steel plate 2mm x 15mm has to be welded all around the woven mesh to remove sharp edges.

5. Protection –
    a. Mild Steel plate of 1.5mm thickness (gauge 16) have to be installed to secure all locks.

    b. Flat bar 4mm x 20mm has to be installed to protect the latch bolt, the deadbolt and, the sliding bolt. They should not be able to be seen from the attack side.



6. Padlocks – All padlock hasps or padlock lockable sliding locks have to be removed.

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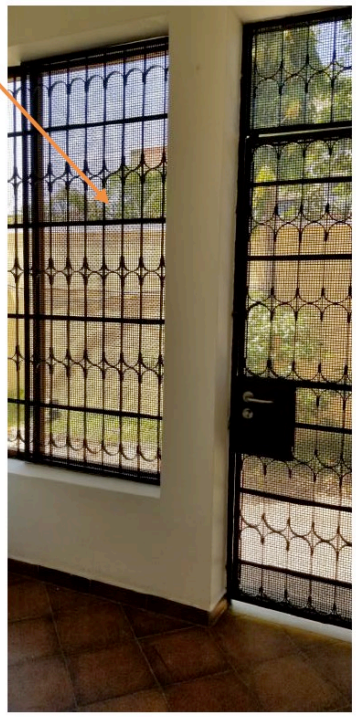
Diana M. Babu
US Embassy
Projects Engineer

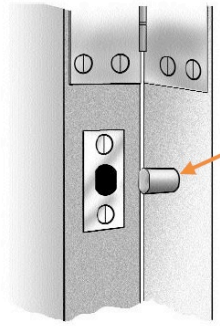
10. Finishing –
    a. All metal parts must be sanded and spray painted with two coats of primer and two coats of finishing oil paint of a color to be determined.
    b. Body sealer (putty) has to be used to smoothen rough finishes.

General Requirements:

11. All works shall be of the highest standard. All material and equipment required shall be of the highest quality. Sample of the material must be provided for approval before installation/application.
12. The door must operate smoothly, easily, properly, and without binding. Locks should engage accurately and securely without forcing or binding.
13. Any damaged finishes must be repaired during the installation time.
14. Both sides of the wall where the door will be installed must be repainted corner to corner with the same color as the existing paint.

7. Side windows or vents must have wire mesh installed to make the lock at least 40 inches out of reach.





8. Hinge Bolts - Three (3) hinge stoppers (16mm x 15 - 20mm long) must be installed on the door.

9. Anchors – The door frame has to be bolted securely to concrete with metal bolts of minimum 12mm diameter inlaid at least 100mm.

Prepared by:

Diana M. Babu
US Embassy
Projects Engineer